ATEX

Hydro-flow

Shipped
WITHOUT OIL

- The purchaser is responsible for the provision of safety guards and the correct installation of all equipment.
- During operation, the coupler contains hot oil, which in case of overload may be ejected through the opening of the fuse. The customer should take precautions and provide an adequate safety guard.
- Read instructions before installing coupler.
- Check alignment and fixation of coupler.

1. SHIPPING CONDITIONS

HYDRO-FLOW couplers are supplied without oil.
They are equipped with seals allowing a continuous operating temperature up to 90°C.
For higher temperatures, special seals are available.
Refer to REXNORD.

2. INSTALLATION

Guards and other safety devices must not prevent good ventilation of hydrodynamic coupler. Also make sure that fusible plug remains accessible.

Mounting of coupler with hollow shaft (fig.1A)

Mount HYDRO-FLOW coupler onto shaft by means of threaded bar, screwed into shaft, a piece of tube and a nut.
To prevent turning of shaft during mounting, use two nuts locked on threaded bar. Remove bar from shaft and lock coupling with bolt. In case coupler is mounted on motorshaft, use inertia of motor to remove mounting bar. This can also be done to tighten said bolt.
If the motorshaft does'nt have a tapped hole , a hammer with soft top will help you to slide coupler on it., see fig. 1B
For installation of HYDRO-FLOW types H(X)C(R), H(X)E(R) and H(X)P(R) refer to gear coupling instructions. For spacing see fig.3.

Alignment (fig.3)

Although the coupling can compensate for a limited degree of misalignment, excessive misalignment will lead to premature wear of the flexible sleeve..
Parallel alignment can be checked with a straight edge, angular alignment with feeler gauge.Respect distance E. Max. permissible misalignments : see table 4.

3. FILLING

Use light mineral oil with viscosity ISO 3448 (VG15 or VG22).
Recommended oils : see table 1
Remove one of the filling plugs and fill with proper quantity : see table 2.

Letters given in table 2 correspond with markings on coupler.
For approximate oil quantity in litres : see table 3.

Rotate coupler until corresponding mark is on top and fill coupler until oil is on a level with opening.

To ensure optimum working conditions, (minimum slip and high efficiency) it is essential that the filling is determined according to the absorbed power. For values not given in tables 2 and 3, interpolation is required.

A higher filling will give lower slip values but higher peak to nominal torque ratio. Lower filling will have reverse effect.

High slip values will decrease the efficiency of the coupler and may cause overheating. The coupler is equipped with a fusible plug which will blow at 140°C (fusible plugs for higher temperatures : upon request). Should fuse blow repeatedly, increase filling.

4. MAINTENANCE

HYDRO-FLOW couplers require limited maintenance.
Change oil every 8000 hours or once a year.

To replace rubber bushes of the PENCOFLEX coupling, axial displacement of coupled motor is required. Removal of rubber bushes is possible after removing the retaining circlips from driving pins.

To replace the flexible elements of the SUREFLEX coupling or the TEXOFLEX coupling, remove screws fitting flanges onto their support. Push flanges closer to each other in order to move them from their centering spigot. Then, pull out the coupling radially and change flexible elements .

5. REMOVAL (Fig.2)

To remove HYDRO-FLOW , use a special screw . This auxiliary device is supplied by us on request.

Thread : see dimension M-fig.2.

Size	**M** H.(R)	**M** HX.(R)
190	1/2“-20 UNF	1/2“-20 UNF
250-400	M20	5/8“-18 UNF
350-400	R 1“	1 1/4“-12 UNF
450-620	R 1 1/4“	1 5/8“-12 UNF
680-870	M45	1 7/8“-12 UNF

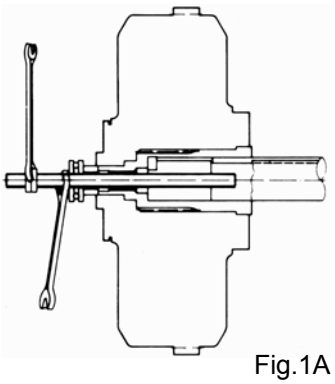


Fig.1A

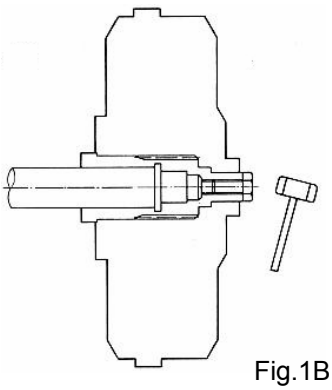


Fig.1B

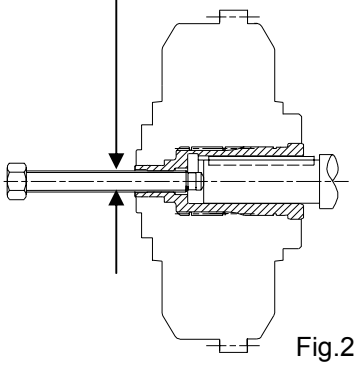
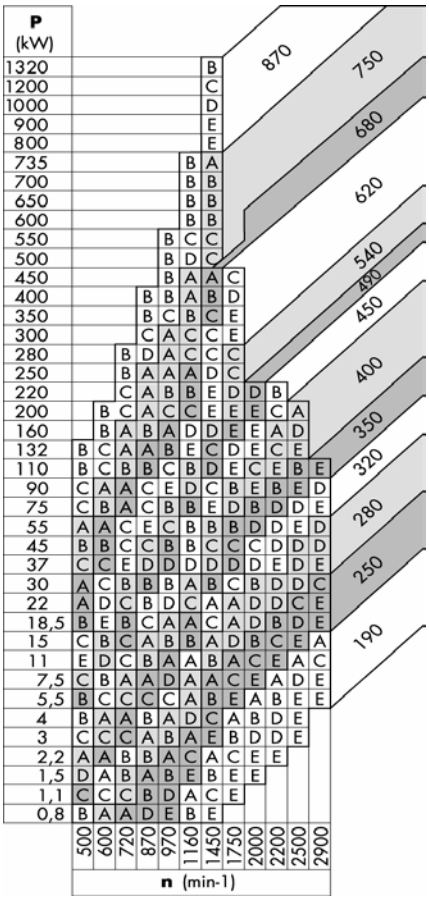


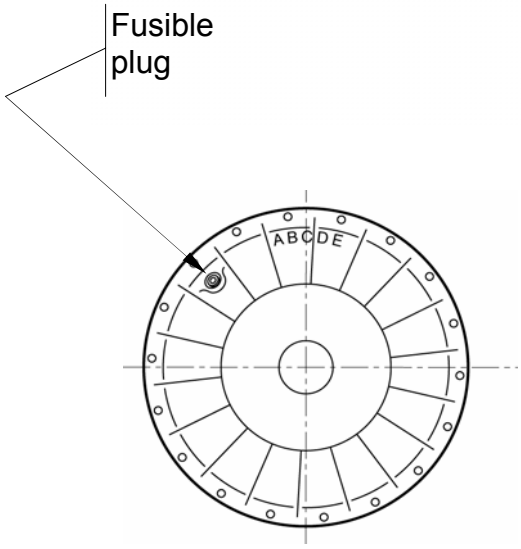
Fig.2

Tab. 1

Oil brands	Oil viscosity	
	VG15	VG22
ARAL	Vitam GF 10	Vitam GF 22
BP	Energol HLP 15	Energol HLP 22
CHEVRON	EP Hydraulic Oil 15	EP Hydraulic Oil 22
ELF	Spinelf 15	Olna 22
ESSO	Nuto H 15	Teresso 32
FINA	Hydran 10	Hydran 22
GULF	Harmony 15AW	Harmony 22AW
MOBIL OIL	D.T.E 11	Velocite 10
SHELL	Tellus Oil R 10	Tellus Oil S22
TEXACO	Rando HDZ 15	Spindura 22
TOTAL	Azolla 15	Azolla 22

Tab. 2
Motor power


P (kW)
1320 B
1200 C
1000 D
900 E
800 E
735 B A
700 B B
650 B B
600 B B
550 B C C
500 B D C
450 B A A C
400 B B A B D
350 B C B C E
300 C A C C E
280 B D A C C C
250 B A A A D C
220 C A B B E D D B
200 B C A C C E E E C A
160 B A B A D D E E A D
132 B C A A B E C D E C E
110 B C B B C B D E C E B E
90 C A A C E D C B E B E D
75 C B A C B B E D B D D E
55 A A C E C B B B D D E D
45 B B C C B B C C C D D D
37 C C E D D D D D D E D E
30 A C B B B A B C B D D C
22 A D C B D C A A D D C E
18,5 B E B C A A C A D B D E
15 C B C A B B A D B C E A
11 E D C B A A B A C E A C
7,5 C B A A D A A C E A D E
5,5 B C C C C A B E A B E E
4 B A A B A D C A B D E
3 C C C A B A E B D D E
2,2 A A B B A C A C E E
1,5 D A B A B E B E E
1,1 C C C B D A C E
0,8 B A A D E B E
870
750
680
620
540
490
450
400
350
320
280
250
190
500 600 720 870 970 1160 1450 1750 2000 2200 2500 2900
n (min-1)



Example

1) Table 2 : 11 kW @1.450 rpm } filling B of size H.280

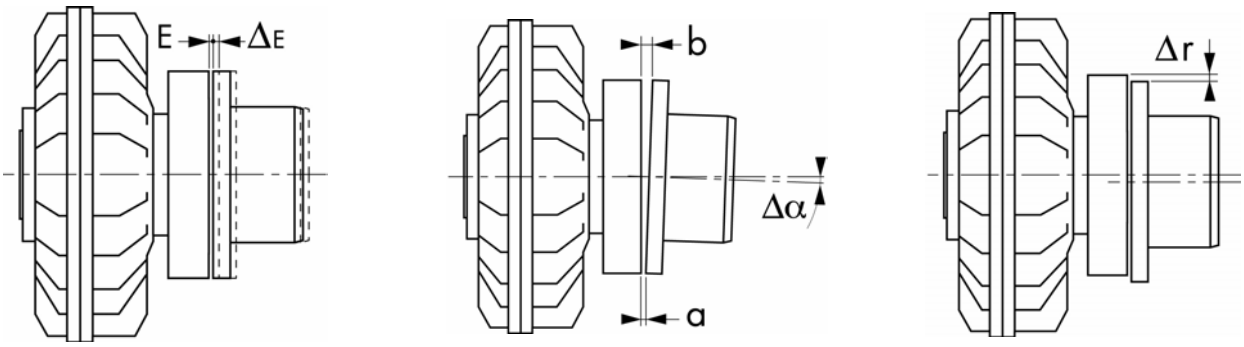
2) Table 3 : Filling B Size H.280 } 2,55 litres

Tab. 3

Size	Oil quantity Litres				
	A	**B**	**C**	**D**	**E**
H.190	0.92	0.86	0.80	0.73	0.65
H.250	1.95	1.80	1.70	1.55	1.40
H.280	2.75	2.55	2.35	2.10	1.85
H.320	4.10	3.80	3.50	3.20	2.90
H.350	5.20	4.80	4.40	4.00	3.60
H.R350	7.50	7.00	6.30	5.70	5.10
H.400	7.60	7.10	6.60	6.00	5.40
H.R400	9.90	9.50	8.90	7.70	6.30
H.450	11.50	11.00	10.00	9.00	8.00
H.R450	15.90	14.40	13.60	12.90	11.70
H.490	14.00	13.50	12.50	11.00	10.00
H.R490	18.90	17.80	15.90	15.10	14.00
H.540	19.00	18.00	16.50	15.50	13.50
H.R540	27.60	25.40	23.50	21.90	19.70
H.620	28.50	26.50	24.50	22.50	20.50
H.R620	37.50	34.50	31.50	28.80	26.10
H.R680	57.00	53.00	50.00	46.50	43.00
H.R750	72.00	68.50	63.00	59.00	54.00
H.R870	107.00	100.00	92.50	88.50	83.50

Fig. 3

H(X)E(R) – H(X)C(R) – H(X)P(R)



Tab. 4

Type	Size	250	280	320	350	400	450	490	540	620
H(X)E	$E^{\Delta E}$ mm	33+2	40+2	40+2	46+2,5	53+2,5	64+3	73+3	88+3	88+3
H(X)ER	(b-a) mm	2,4	2,8	2,8	3,3	3,8	4,5	5,0	6,2	6,2
	Δr mm	0,5	0,6	0,6	0,6	0,8	0,8	1,0	1,2	1,2

Type	Size	620	680	750	870
H(X)C	$E^{\Delta E}$ mm	9+2	9+2	11+2	11+2
H(X)CR	(b-a) mm	2,2	2,4	2,8	2,8
	Δr mm	1,0	1,0	1,2	1,2

Type	Size	190	250	280	320	350	400	450	490	540	620	680	750	870
H(X)P	$E^{\Delta E}$ mm	3,5+1,5	3,5+1,5	3,5+1,5	3,5+1,5	3,5+1,5	3,5+1,5	4+2	4+2	4+2	4+2	4+2	4+2	5,5+2,5
H(X)PR	(b-a) mm	0,30	0,30	0,30	0,30	0,30	0,30	0,45	0,45	0,45	0,45	0,45	0,45	0,60
	Δr mm	0,2	0,2	0,2	0,2	0,2	0,2	0,3	0,3	0,3	0,3	0,3	0,3	0,3

Record each misalignment value., calculate the ratio of this value by the maximum indicated value.
The sum of these ratios shall not exceed 1 :

$dr/\Delta r + d\alpha/\Delta\alpha + dE/\Delta E < 1$

with :
dr : recorded radial misalignment value
Δr : max. radial masalignment value
$d\alpha$: recorded angular misalignment value
$\Delta\alpha$: max. angular masalignment value
dE : recorded axial misalignment value
ΔE : max. axial masalignment value

Verification measurements shall be made at four points located 90° apart

Make alignment without the flexible elements .

Checking for correct alignment is best done after the equipment is warmed up .

6. GROUNDED

The coupling or the shafts it is mounted on should be electrically grounded.

7. USE IN EXPLOSIVE AREA.

Indications and instructions concerning the use in explosive areas :

7-1-Control intervals for use in explosive areas.

Explosion group	Controls intervals
II 2D c	The visual check of the coupler must be effected after 100 operating hours for the first time, after one month at the latest. If no leaks are observed the further inspections must be effected every 2000 operating hours or every 3 months at the latest. In case of leakage a search of the possible causes must be effected in accordance with the chapter «dysfunction and remedies » The periodicity of checks has to be reseted in case of change of operating conditions.

7-2-Wear measurement.

Refer to the service manual of the coupling.

CAUTION : To insure a long lifetime of the coupling and to avoid dangers regarding in explosive areas the misalignment must be carefully checked.

7-3-Couplers materials.

Housing material : Aluminium alloy G Al Si 9 according to UNI 3051 (EN AB43100).
Shaft and covers material : Steel.

7-4-Marking of couplers for explosive areas.

Couplers for the use in hazardous areas are marked :

II 2 D

The surface temperature has to be noticed with order. Standard value by omission 145°C.

7-5-Start-up.

Before the start-up check the tightening of the setscrews or the tightening of the screw on shaft end.

Check the alignment and the distance between the coupling plate or the belt tension.

In case of use, check the tightening of the fixation nuts of the thermal protection detector and the speed controller. Check the speed controller setting too.

In explosive ambience the screws must be protected against self-loosening for example by use of bond on threading.

7-6- dysfunction and remedies .

For the versions with coupling: Refer to the service manual of the coupling.

Dysfunction	Cause	Danger in explosive areas	Solution
Noises and/or vibrations in operation	Misalignment. Wear of coupling elastic elements.	Danger of oil leakage.	1) put the unit out of operation. 2) Eliminate the cause of misalignment (loose foundation bolt, break of machine fixing, heat expansion, mounting dimensions non respected, deflection on load. 3) Check the wear of coupling elastic elements and change it if necessary. 4) Check the oil level of the coupler and fill in if necessary. 5) Check the alignment stationary and in operation and correct it if necessary.
	self-loosening of the axial fixation of the coupler.	Danger of inflammation due to sparking.	1) put the unit out of operation. 2) Dismantle the axial fixation and remove the coupler. 3) Check the coupler parts and change it if necessary. 4) reassemble the coupler on the shaft. 5) Check the alignment stationary and in operation and correct it if necessary.
Belt slip (HV and HVR versions)	Belts wear. Belts tension insufficient.	Danger of inflammation due to sparking.	1) put the unit out of operation. 2) Establish the cause of the slip. 3) Replace the belts. 4) Check the belts tension after some hours of operation. Correct it if necessary.

7-6- dysfunction and remedies (suite). ⟨Ex⟩

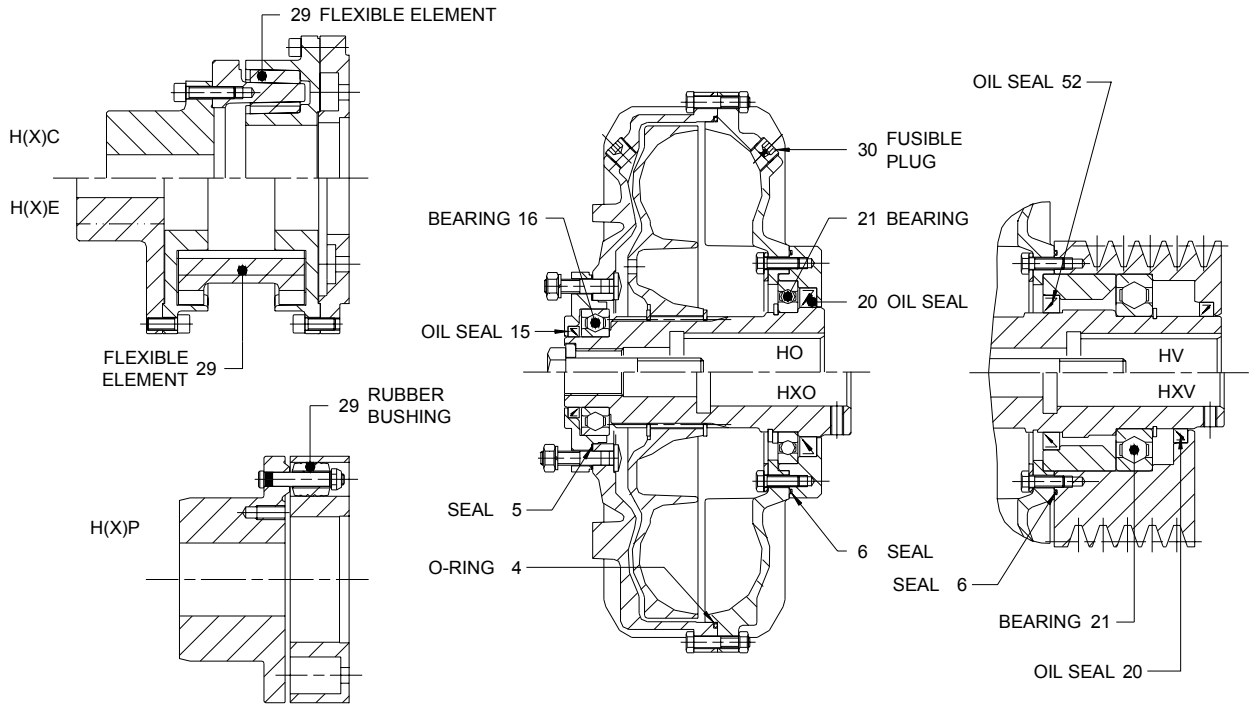
Dysfunction	Cause	Danger in explosive areas	Solution
Activation of thermal protection or fusible plug fusion.	The operating conditions are not in accordance with the coupler performance.	Danger of superheated oil leakage.	1) put the unit out of operation. 2) Check the operating conditions and select a bigger coupler. 3) Install the new coupler. 4) Check the alignment stationary and in operation and correct it if necessary.
	Mistake at the machine start.		1) put the unit out of operation. 2) check the coupling elastic elements or the belts. Change it if necessary. 3) Fill the coupler with the requested oil quantity. 4) Check the alignment stationary and in operation and correct it if necessary. 5) Train and drill the working and maintenance staff.
	Machine lock.		1) put the unit out of operation. 2) Detect and eliminate the cause of machine lock. 3) Replace the fusible plug or reset the thermal protection. 4) Fill the coupler with the requested oil quantity. 5) Check the alignment stationary and in operation and correct it if necessary.
Oil leakage on coupler.	Contact with aggressive liquids hydrocarbon, ozone…		1) put the unit out of operation. 2) Detect and plug the leak. 3) Fill the coupler with the requested oil quantity. 4) Protect the coupler from any contact with the faulty fluid.
	Misalignment.		1) put the unit out of operation. 2) Eliminate the cause of misalignment. 3) Detect and plug the leak. 4) Fill the coupler with the requested oil quantity. 5) Check the alignment stationary and in operation and correct it if necessary.

CAUTION !: REXNORD does not assume any liabilities or guarantees regarding the use of spare parts and accessories not provided by REXNORD and for the damages resulting here from.

SPARE PARTS
COUPLERS WITHOUT DELAY CHAMBER
H(X)C-H(X)E-HXF- H(X)O-H(X)P-HXS-H(X)V

POS.	TYPE		Size									
	H(X)V	H(X)C H(X)E HXF H(X)O H(X)P HXS	**190**	**250**	**280**	**320**	**350**	**400**	**450**	**490**	**540**	**620**
4	X	X	U76-6198300	U76-6248300	U76-0280300	U76-6323400	U76-6355353	U76-6405533	U76-6456533	U76-6507533	U76-6558533	U76-6633533
5	X	X	086-6400001	086-6400021	086-6400021	U76-6088353	086-6400051	086-6400061	U76-6136353	U76-6136353	U76-6198300	U76-6198300
6	X	X	086-6400011	086-6400031	086-6400031	086-6400041	U76-6165262	U76-6190270	U76-6216262	U76-6216262	U76-6248300	U76-6248300
15	X	X	BA 20x35x7	BA 30x50x10	BA 30x50x10	BA 30x50x10	BA 50x65x8	BA 50x65x8	BA 54x85x10	BA 54x85x10	BA 78x100x10	BA 78x100x10
16	X	X	6204 C3	6206 C3	6206 C3	6206 C3	6210 C3	6211 C3	6212 C3	6212 C3	6216 C3	6216 C3
20		X	BA 65x80x8	BA 72x90x10	BA 72x90x10	BA 72x90x10	BA 92x120x12	BA 105x130x12	BA 130x160x12	BA 130x160x12	BA 140X170x13	BA 140X170x13
	X		BA 45x60x8	BASL 65x90x10	BASL 65x90x10	BASL 65x90x10	BASL 80x100x10	BA 105x130x12	BASL 120x150x15	BASL 120x150x15	BA 130X160x12	BA 130X160x12
21		X	16011 C3	16013 C3	16013 C3	16013 C3	16017 C3	16019 C3	16024 C3	16024 C3	6026 C3	6026 C3
	X		16009 C3	6013 C3	6013 C3	6013 C3	6216 C3	6021 C3	6024 C3	6024 C3	6026 C3	6026 C3
30	X	X	086-6410001	086-6410001	086-6410001	086-6410001	086-6420001	086-6420001	086-6420001	086-6420001	086-6420001	086-6420001
52	X		BA 65x80x8	BASL 65x90x10	BASL 65x90x10	BASL 65x90x10	BASL 85x110x12	BA 105x130x12	BASL 120x150x15	BASL 120x150x15	BA 130x160x12	BA 130x160x12

29	H(X)E		350G1K003	350G1L003	350G1L003	350G1M003	350G1N003	350G1P003	350G1Q003	350G1R003	350G1R003
	H(X)P	3 x 034-0003101	3 x 034-0003101	3 x 034-0003101	6 x 034-0003101	8 x 034-0003101	8 x 034-0003101	6 x 034-0003201	6 x 034-0003201	8 x 034-0003201	8 x 034-0003201



SPARE PARTS
COUPLERS WITH DELAY CHAMBER
H(X)CR-H(X)ER-HXFR-H(X)OR-H(X)PR-HXSR-H(X)VR

POS.	TYPE		Size								
	H(X)VR	H(X)CR H(X)ER HXFR H(X)PR H(X)OR HXSR	**350**	**400**	**450**	**490**	**540**	**620**	**680**	**750**	**870**
4	X	X	U76-6355353	U76-6405533	U76-6456533	U76-6507533	U76-6558533	**U76-6633533**	TF C102397	TF C102251	TF C103187
6	X	X	U76-6165262	U76-6190270	U76-6216262	U76-6216262	U76-6248300	U76-6248300	TF C102399	TF C102254	TF C103190
15	X	X	BA 50x65x8	BA 50x65x8	BA 54x85x10	BA 54x85x10	BA 78x100x10	BA 78x100x10	TF N6806BR	TF N6806BO	TF N6806BO
16	X	X	6210 C3	6211 C3	6212 C3	6212 C3	6216 C3	6216 C3	6218 C3	6220 C3	6224 C3
20		X	BA 92x120x12	BA 105x130x12	BA 130x160x12	BA 130x160x12	BA 140X170x13	BA 140X170x13	TF N6806BS	TF N6806BP	TF N6806BV
	X		BASL 80x100x10	BA 105x130x12	BASL 120x150x15	BASL 120x150x15	BA 130X160x12	BA 130X160x12			
21		X	16017 C3	16019 C3	16024 C3	16024 C3	6026 C3	6026 C3	6034 C3	6038M C3	6044M C3
	X		6216 C3	6021 C3	6024 C3	6024 C3	6026 C3	6026 C3			
30	X	X	086-6420001	086-6420001	086-6420001	086-6420001	086-6420001	086-6420001	086-6450001	086-6450001	086-6450001
42		X							TF N6702CG	TF N6702CC	TF N6702DC
45	X	X	U76-6222353	U76-16252QQ	U76-6323400	U76-6323400	U76-6392500	U76-6392500	TF N6702CD	TF N6702CD	TF N6702CD
52	X		BASL 85x110x12	BA 105x130x12	BASL 120x150x15	BASL 120x150x15	BA 130x160x12	BA 130x160x12			

29	H(X)CR						8 x 352G2N001	8 x 352G2P001	8 x 352G2Q001	8 x 352G2Q001
	H(X)ER	350G1M003	350G1N003	350G1P003	350G1Q003	350G1R003	350G1R003			
	H(X)PR	8 x 034-0003101	8 x 034-0003101	6 x 034-0003201	6 x 034-0003201	8 x 034-0003201	8 x 034-0003201